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TECHNICAL SUPPORT SECTION
DOCUMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CENTRAL DISTRICT OFFICE
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CHICAGO, ILLINOIS 60604-3590

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MEMORANDUM

DATE:

SUBJECT: FIELD AUDIT OF LENZ OIL SERVICES, INC. REMEDIAL INVESTIGATION/FEASIBILITY STUDY LEMONT, ILLINOIS (TFA470:DI)

FROM: Valerie Jones, Chief
Central District Office (SC-10C)

TO: Jo-Lynn Traub
Office of Superfund (HSRL-6J)

Attached is the Superfund Field Audit for the Lenz Oil Services, Inc. Remedial Investigation/Feasibility Study, Lemont, Illinois. The audit was conducted on August 8, 1994.

If you have any questions, please call me at 886-5500 or John Mc Guire at 353-2704.

cc: Willie Harris (SQ-14J)
Steve Ostrodka (HSRL-5J)

Lenz Oil Services, Inc. Remedial Investigation/Feasibility Study
Lemont, Illinois

Field Audit Report
August 8, 1994

Conducted by:

John Mc Guire, Team Leader, U.S. EPA, ESD/CDO
Brian P. Freeman, Chemist & RSCC, MQAB/CASS

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INTRODUCTION

A field audit was conducted on August 8, 1994, of the sampling activity performed Lenz Oil Services, Inc. Soil core samples were collected by ERM and Rock & Soil a contractor to Lenz Oil Services. Black & Veatch Waste Science, Inc. (B&V) was under contract to USEPA to oversee this work. The work was being performed under a Quality Assurance Project Plan (QAPjP) for Federal Oversight of PRP-Lead "Lenz Oil Services, Inc. Remedial Investigation/Feasibility Study Activates At Site Lemont, Illinois", August 3, 1994. This QAPjP was prepared by B&V, Project Number 71530. The purpose of the audit, was to determine whether the sampling activity conformed to the procedures specified in B&V's QAPjP.

PARTICIPANTS

USEPA
John Mc Guire, Team Leader, Environmental Engineer, SC-10C
Brian P. Freeman, Chemist & RSCC, MQAB/CASS

Black & Veatch
Mitch Balek, Civil Engineer

ERM (Contractor to the PRP)
Russel Pederson, Geologist
Dan Peterson, Geologist

Rock & Soil (Subcontractor to ERM)
Mike Crinaldi, Driller
John Meace, Driller

DESCRIPTION OF AUDIT ACTIVITIES

ERM had planned on collect samples as part of a Remedial Investigation/Feasibility Study (RI/FS) at this location. The assessment was to include the collection core samples of soil at several depths. These samples were to be analyzed for routine inorganic and organic compounds.

The audit team reviewed B&V's site sampling plan, the site safety plan and examined sample documentation. The documentation included sample custody procedures, sample tags and shipping procedures. We observed the collection of soil core samples at two locations.

B&V was using outdated SAS Chain of Custody paperwork for potential sample scheduling. The paperwork contained the old references to the Sample Management Office, which is no longer used for SAS Scheduling. The audit team recommended that B&V should use the appropriate newly-revised paperwork for SAS, which was provided to them in June, 1994.

SAMPLE HANDLING

The subcontractor, Soil & Rock, used drilling equipment to collect the core samples. Augers were used to remove material from the bore hole. At intervals, the auger was removed and a split spoon sampler was attached to collect soil samples. The sample team collected these samples as required by the QAPjP.

FIELD EQUIPMENT DECONTAMINATION

The PRP was using deionized (DI) water purchased in plastic containers to rinse coring and sampling equipment. The quality of this water (metals content) can vary, depending the manufactures. The plastic container could also contain organic contaminates.

Decontaminated soil sampling equipment was observed. The soil coring equipment was washed in soap and tap water. After washing, the equipment was rinsed with the DI water. The equipment did not appear to be rinsed sufficiently. Soap

residue could still be seen on the coring tools, and split spoons. This practice could contaminate the samples with surfactants, aluminum, and other metals. We recommended that equipment should be rinsed more thoroughly and that the rinse water be changed more frequently.

FIELD CALIBRATION PROCEDURES

Neither the QAPjP nor the site specific plan required field measurements that required field calibration of equipment.

FIELD SCREENING PROCEDURES

There were no screening procedures being used at this site at the time of the audit.

QUALITY CONTROL PROCEDURES

Quality Control Samples

We did not observe the collection of any of the required quality control samples.

Field Screening

There were no field screening procedures being used at the time of the audit.

CLOSE SUPPORT LABORATORY (CSL) ACTIVITIES

At the time of the audit, a close support laboratory was not being used.

SAFETY PRACTICES

The safety plan was available on site and was being followed. We did note that food product, a bag of fresh cucumbers, were being stored in the equipment trailer.

SUMMARY OF FINDINGS AND CONCLUSIONS

The audit teams findings are summarized below. We discussed these findings with B&V and the PRP's contractor.

Sampling Procedures

1. Finding

During the course of the audit, it was noted that the PRP was using bottled, commercially available distilled water packaged in plastic containers. This practice is not recommended. There is a potential contamination of sample when using this water for rinsing equipment. The plastic containers can contain organic compounds and the quality of the water can vary form one manufacture to another. We recommended that water HPLC lab-quality distilled deionized water should be used.

2. Finding

It was noted during the audit, that sampling equipment was rinsed and decontaminated in such a manner, that soap residue could remain on the coring tools, and split spoons. This practice could give rise to contamination of the sample with soap residue, and cause surfactants and aluminum (and other metals) to be introduced into the samples. We recommended that the PRP should rinse the tools more thoroughly, and change the dirty rinse water more frequently to minimize this event.

Sampling Paperwork

1. Finding

It was noted that B&V was using outdated SAS Chain of Custody paperwork for potential sample scheduling. The paperwork contained the old references to the Sample Management Office, which is no longer used for SAS Scheduling. It was recommended that B&V should use the appropriate newly-revised paperwork for SAS, which was provided to them in June, 1994.

Other Issues

1. Finding

The PRP was working out of a sampling trailer on site which contained environmental sampling equipment, chemicals, and supplies. The PRP personnel were also storing food items, notably a bag of fresh cucumbers. The audit team recommended that, from the perspective of job safety, food items should not be stored with chemicals or other sampling gear.

ATTACHMENTS

Superfund Field Audit Checklist

ATTACHMENT I

Superfund Field Audit Checklist

1. Facility/Site: Lenz Oil

2. Address: Lemont, IL

3. Facility Contact: Russel Pederson

   Phone No.: _____

   Representing: ERM

4. Date(s) of Audit: Aug. 8, 1994

5. Activities Audited: Soil sampling

6. Audit Team Information

   Team Leader (Name/Title/Affiliation): John McGuire
   Environmental Engineer / USEPA/ESD/CDO

   Team Members (Name/Title/Affiliation):

   1. Brian P. Freeman, Chemist/RSCC/CRL/LSSS
   2. _____
   3. _____
   4. _____
   5. _____
   6. _____

7. Documents:	Submitted Name/Date	Peviewed Name/Date	Revised	Approved Name/Date
Field Sampling Plan				
Workplan				
QA Project Plan				
Safety Plan				

8. Sample Matrices Observed: [ ] Air; [✓] Soil; [ ] Water;

   [ ] Sediment; [ ] Sludge; [ ] Hazardous Waste

   [ ] Environmental (Grass-Detritus); [ ] Biology (Mammals-Fish)

Superfund Field Audit Checklist (Cont'd)

9. Should data be qualified due to collection procedures: _____Yes ✓ No

_____Some Reasons: _____

10. Personnel on Site:

Name/Title	Representing	Task
Mitch Balch	BTV	Federal On-site
Russ Pederson	ERM/PRP	PRP Contractor
Dave Peterson	ERM/PRP	PRP contractor
Mike Crimaldi	Rock & Soil	Subcontractor
Josh Meece	Rock & Soil	Subcontractor

Prime Contractor: ERM

Sub-Contractor: ~~So~~ Rock & Soil

11. Personnel Experience:

Name	Experience

12. Site Status:

_____ State Lead Superfund _____ Responsible Party

_____ US EPA Lead Superfund _____ Other: _____

_____

13. Project Status:

_____ Site Inspection _____ Listing Site Inspection

_____ RI/FS _____ Emergency

_____ Other: _____

RD/RA _____

I. PAPERWORK AUDIT

		Yes	No	Comments
1.	Is the QAPP available at the site?	✓		
2.	Is S & A Plan available at the site?	✓		
3.	Are SOPs for field monitoring available? Are they being followed?	✓		
4.	Are field instrument manuals available?	✓		
5.	Is SOP available for CLP paperwork procedures?	✓		
6.	Are field records maintained in an evidence file? How?	✓		
7.	Are records and summaries of past field blanks available?			
8.	Are bound field log books used for field documentation?	✓		
9.	Is a Chain-of-Custody record completed for all samples collected?	✓		B.V
10.	Is the information specified in the QAPP/sampling plan included on each Chain-of-Custody record?	✓		B+V was using out dated Chain-of custody. See report
11.	Does a sample analysis request sheet accompany all samples on delivery to the laboratory sample custodian?	✓		
12.	Has a field custodian been assigned for sample recovery, preservation, and storage until shipment?	✓		

II. FIELD MONITORING AUDIT

	Yes	No	Comments
1. Is field monitoring specified in the QAAP? Does it include:			
pH?		✓	NA
Conductivity?			↓
Temperature?			
HNU?			PRP
OVA?			PRP.
Dissolved Oxygen?			NA
Other?			↓
2. Are the monitoring procedures used in the field, the same as specified in the QAAP?	✓		
If not, are the field monitoring procedures used acceptable?			
3. Are calibrations or calibration checks done? Frequency?	✓		
4. Are calibration checks recorded in a log book?	✓		
5. Are the calibration procedures used, the same as in S & A Plan/QAAP?	✓		
6. Is temperature measurement standardized against NIST thermometer?			NA
7. Is HNU standardized by benzene equivalent standards? Is OVA standardized by methane?	✓		
8. Are maintenance record(s) available.	✓		

III. SAMPLING AUDIT

	Yes	No	Comments
A. RESIDENTIAL and PUBLIC SUPPLY WELL SAMPLING:			
1. Is sampling SOP available?			N/A
2. Is the sampling SOP followed or are acceptable procedures followed, as specified in the QAAP?			↓
3. Are samples taken before any water treatment (i.e., softening)?			
4. Is water chlorinated in the sample?			
5. Is purging of water pipe adequate?			
B. SURFACE WATER/SEDIMENT SAMPLING			N/A
1. Are sampling SOPs available?			↓
2. Are the sampling SOPs followed or are acceptable procedures followed, as specified in the QAAP?			
3. Do sampling points give representative samples?			
4. Are field measurements used (i.e., Temp., D.O.)?			
If so, do the measurement procedures follow SOPs/QAAP?			
5. Is compositing of sediments done? Is it done correctly?			
6. Are decontamination of sampling devices done according to SOP/QAAP?			

III. SAMPLING AUDIT (Cont'd)

	Yes	No	Comments
C. MONITORING WELL SAMPLING			N A
1. Is there a well sampling SOP available?			
2. Are the following procedures conducted according to the SOP/QAAP?			
a. Measurement of water level and calculation of well volumes			
b. Purging of well volumes			
3. Are pH, conductivity temperature and/or D.O. monitored for representatives of groundwater?			
4. Are sampling equipment decontaminated before sampling?			
5. Are sampling equipment decontaminated between sampling points?			
6. Are proper sampling equipment used for different sampling types?			
7. Is filtration of samples done promptly and properly (i.e., within ten minutes of sampling)?			
8. Are field blanks collected properly following decontamination of sampling equipment?			
9. Are items 3 through 8 above, conducted in accordance with the SOP or are acceptable procedures followed, as specified in the QAAP?			

III. SAMPLING AUDIT (Cont'd)

	Yes	No	Comments
D. SOIL SAMPLING			
1. Is soil sampling SOP available?	✓		
2. Is the soil sampling SOP followed in the field or are acceptable procedures followed, as specified in the QAAP?	✓		
3. Do sampling points give representative samples?	✓		
4. Is the procedure for collection of background samples adequate and representative of background?	✓		
5. Is compositing of sampling:done?			NA
6. Is there designation of areas where low/medium/high concentration samples can be collected and differentiated?			
7. Are decontamination of sampling devices done according to SOP/QAAP?	✓		see problem with DI water and soap residue in report.
E. LEACHATE SAMPLING			NA
1. Is leachate sampling SOP available?			
2. Is the leachate sampling SOP followed in the field or are acceptable procedures followed, as specified in the QAAP?			
3. Is there designation of areas where low/medium/high concentration samples can be collectd and differentiated?			
4. Are decontamination of sampling devices done according to SOP/QAAP?			

III. SAMPLING AUDIT (Cont'd)

	Yes	No	Comments
F. AIR/SOIL GAS SAMPLING			NA
1. Is gas sampling SOP available?			
2. Is the gas sampling SOP followed in the field or are acceptable procedures followed, as specified in the QAAP?			
3. Do sampling locations give representative samples?			
4. Is the field soil gas analysis SOP followed, as specified in the QAAP?			
5. Are sampling probes decontaminated between uses?			
G. COLLECTION of BLANKS and QC SAMPLES			
1. Is a SOP available for preparing blanks for all matrices?			No Blank required
2. Is reagent water suitable for the preparation of field blanks?			
3. Are blanks prepared at proper frequencies and number?			
4. Are field blanks taken per SOP/QAAP or in an acceptable manner?			
5. Are trip blanks provided for VOC sampling?			
6. Are there materials used specifically for soil blanks?			
If so, are the blanks prepared correctly?			
7. Are the following QC samples being collected properly and in the frequencies specified by the QAAP?			
a) Duplicates	✓		Not required
b) Matrix spike/MSD	✓		
c) Blanks			

III. SAMPLING AUDIT (Cont'd)

	Yes	No	Comments
H. SAMPLE PRESERVATION PACKAGE and SHIPPING PROCEDURES.			
1. Are there SOPs available for the above procedures?	✓		
2. Are sample preservation procedures conducted according to the SOP/QAAP for:	✓		
a) CLP RAS organics and inorganics?	✓		
b) CLP SAS organics and inorganics?	✓		
c) CRL protocol?	✓		
3. Is sample preservation done in a timely fashion?	✓		
4. Are the appropriate sampling containers used as specified in the QAAP for"	✓		
a) CLP RAS organics and inorganics?	✓		
b) CLP SAS organics and inorganics?	✓		
c) CFL protocol?			
5. Are the samples numbered according to the system specified in the QAAP?	✓		
6. Are sampling tags filled out properly?	✓		
7. Are shipping documents filled out properly?	✓		
8. Are samle traffic reports and records maintained in an organized manner?	✓	✓	using our data (Chain-of-custody) Traffic reports.
9. Are shipping coolers prepared and sealed properly?	✓		

IV. WELL PLACEMENT/INSTALLATION AUDIT

	Yes	No	Comments
1. Are well placements in accordance with the QAAP or workplan?			NA
2. Are there SOPs available for well drilling and development?			
3. Are all well drilling procedures conducted according to the SOP or are acceptable procedures followed, as specified by the QAAP?			
4. Is installation procedure of the well casing and well screen acceptable?			
5. Is decontamination of casing materials done properly?			
6. Are materials used in the installation acceptable?			
7. Is installation procedure of the filter pack material acceptable?			
8. Is installation procedure of the bentonite seal acceptable?			
9. Is protective casing installed?			
10. Is well development procedure acceptable?			
11. Are well logs recorded and maintained properly?			